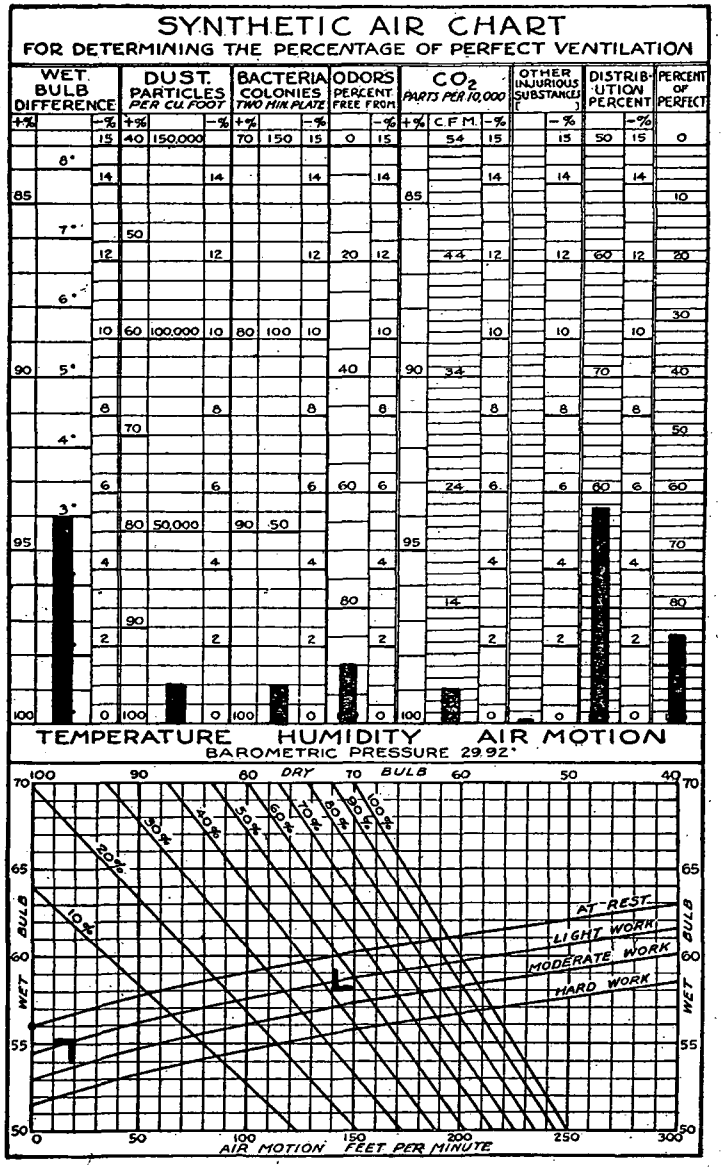

FIG. 1. ILLUSTRATION OF THE USE OF THE SYNTHETIC AIR CHART.

To illustrate the method of graduating the columns, consider the first which is headed Wet Bulb Difference. When at rest with no air motion, the ideal wet bulb temperature is 56 deg. The upper portion of the column represents the unlivable condition which is approximately 106 deg. with 100 per cent humidity or a wet bulb difference of 50 deg. from the ideal. Any variation from 56 deg. would therefore represent a definite percentage of variation from the ideal. The graduations in the other columns were constructed in like manner.

After the values of all the factors have been determined by test, the results are shown on the chart by a heavy vertical line (⅛ in. wide) and the height of the line will indicate the results obtained in the test. Penalizations for all the factors may then be read directly opposite the top of each line. All the "—%'s" are then totaled and the sum subtracted from 100 per cent to determine the Percent of Perfect ventilation for the room as a whole. This result is plotted

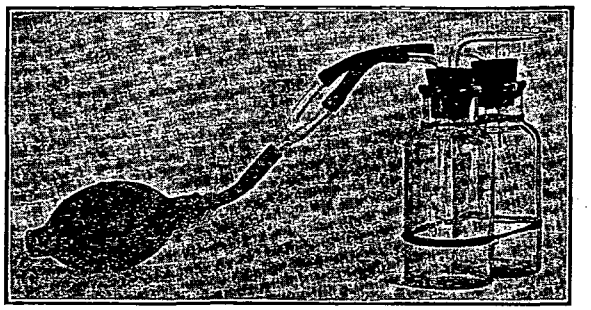

FIG. 2. AMMONIUM CHLORIDE APPARATUS FOR DETERMINING VELOCITY AND DIRECTION OF AIR CURRENTS.

in the last column headed Percent of Perfect. For example, if the sum of all "—%'s" found in the different columns is 15⅜, per cent, then the difference between 100 and 15⅜, or 84⅝ per cent, is plotted in the last column as the final Percent of Perfect.

TO MAKE THE TEST

Temperature, Humidity, and Air Motion.—Temperatures and humidities shall be determined with a sling psychrometer. The extent and direction of air movement in the room may be determined by observing the velocity of a puff of vapor from an ammonium-chloride apparatus, such as shown in Fig. 2. This apparatus consists of a bottle of hydrochloric acid and a bottle of ammonium chloride, each bottle having a two-holed rubber stopper supplied with bent glass tubing similar to a wash bottle. A small pressure bulb forces the air through the two bottles simultaneously, and when